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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,497	02/04/2005	Ian Fraser Jarvics	08830-0311US1	1844

23973 7590 07/25/2007

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EXAMINER

ALLEN, CAMERON J

ART UNIT	PAPER NUMBER
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1709

MAIL DATE	DELIVERY MODE
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07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,497

Applicant(s)

JARVIES ET AL.

Examiner

Cameron J. Allen

Art Unit

1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.
- 7) ☐ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/4/2005, 5/23/2005, 3/5/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Baron (WO 99/61075).

Regarding claim 1, Baron teaches an apparatus for the treatment of hazardous material and decontamination of items (Page 4 2nd paragraph) contaminated with such material comprising an operator accessible treatment vessel (figure 1 102) adapted to hold said hazardous material or contaminated items and a light source capable of irradiating contents within the treatment vessel with a predetermined wavelength of light. (Figure 3 304)

Regarding claim 2, Baron teaches an apparatus according to Claim 1 wherein the treatment vessel comprises at least one tray for holding the hazardous material or contaminated items, (Figure 2 208) and distribution means for circulating a carrier medium within or through the apparatus. (Figure 7 702)

Regarding claim 3, Baron teaches an apparatus according to further comprising including monitoring means. (Page 4 3rd Paragraphs)

Claims 6,7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Tribelsky et al (US 6,555,011).

Regarding claim 6, Tribelsky teaches a method for treatment for hazardous material or decontamination of items (column 1 line 59-61) contaminated with such material comprising the step of irradiating said material or said items in the presence of a catalyst (Column 4 line 21) with light having a wavelength in the range of from 310 to 400 nanometers. (Column 3 line 60)

Regarding claim 7, Tribelsky teaches a method according to Claim 6 wherein the catalyst is TiO₂. (Column 4 line 21)

Regarding claim 10, Tribelsky teaches a method according to Claim 6, wherein the irradiation step is carried out in an aqueous based carrier medium. (Column 1 line 60 –65)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1709

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tribelsky as applied to claims 6-7 above, and further in view of Yoshiomi (JP 04111120).

Regarding claim 8, Tribelsky teaches a method according to Claim 7 but does not teach wherein the catalyst is TiO₂ in either rutile or anatase form. Yoshiomi does teach wherein the catalyst is TiO₂ in anatase form (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tribelsky with Yoshiomi because Tribelsky teaches the use of TiO₂ in treating microorganisms in material and Yoshiomi teaches the use of TiO₂ in treating microorganisms in material in the form of anatase. Therefore it would have been obvious to use a form of TiO₂ known in the art to treat microorganisms.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tribelsky et al (US 6,555,011).

Regarding claim 9, Tribelsky teaches the a method according to Claim 6, wherein the irradiation step is carried out at a temperature of between about 15°C to 35°C but does not teach a pressure of between about 1 bar to 5 bar. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to operate at a pressure between 1 bar and 5 bar, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baron as applied to claim 1 above, and further in view of Melanson et al. (US 5,395,522)

Regarding claim 4, Baron teaches an apparatus according to Claim 1 but does not teach further including a holding tank capable of holding a carrier medium, a catalyst hopper capable of holding a catalyst, a mixing vessel facilitating mixing of the carrier medium and the catalyst, wherein the treatment vessel comprises at least one treatment chamber each having a housing containing a plurality of treatment beds and a light source, and a distribution header for controlling the flow of carrier medium and catalyst into the treatment chambers. Melanson does teach holding tank capable of holding a carrier medium (column 4 line 60 vessel 26), a catalyst hopper capable of holding a catalyst, (column 6 line 25-30) a mixing vessel facilitating mixing of the carrier medium and the catalyst (Column 6 line 27) The examiner interprets the column to facilitate mixing, wherein the treatment vessel comprises at least one treatment chamber each having a housing containing a plurality of treatment beds and a light source, (column 5 line 35-37)(Column 5 line 45) and a distribution header for controlling the flow of carrier

Art Unit: 1709

medium and catalyst into the treatment chambers (column 5 line 28). The examiner interprets the manifold to be the equivalent as a distribution header. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Baron with Melanson, since it is known in the art that they both teach of effective ways of disinfecting using UV.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach wherein each treatment bed comprises means for inducing turbulent flow within the carrier medium.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5130031, US 5449466.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron J. Allen whose telephone number is 571-2703164. The examiner can normally be reached on Mon-Fri 8-5 alternate Fri off.

Art Unit: 1709

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA


WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER